AMENDMENT TO THE CLAIMS

Please delete non-elected Claims 1-32.

Please add new Claim 45 as indicated below

33. (Original) A method of cleaning a chemical vapor deposition (CVD) reaction chamber with cleaning gas provided through a remote plasma discharge chamber, comprising:

dissociating cleaning gas within the remote plasma discharge chamber by applying energy with a power of less than about 3,000 W;

supplying activated species from the remote plasma discharge chamber to the reaction chamber through a piping;

removing adhered deposits from CVD reactions on a wall of the reaction chamber at a rate of greater than or equal to about 2.0 microns/minute.

34. (Original) The method of Claim 33, wherein the deposits on the reaction chamber wall comprise silicon nitride.

35. (Original) The method of Claim 33, wherein the cleaning gas comprises fluorine-containing gas and the activated species comprises fluorine active species.

36. (Original) The method of Claim 33, wherein the applied energy has a frequency between about 300 kHz and 500 kHz.

37. (Original) The method of Claim 33, wherein supplying activated species comprises flowing NF_3 through the remote plasma discharge chamber at a rate between about 0.5 slm and 1.5 slm.

38. (Original) The method of Claim 33, further comprising opening a valve on the piping after conducting a CVD reaction and prior to supplying activated species.

39. (Original) The method of Claim 38, wherein opening a valve comprises withdrawing a sealing element completely from a path to form an opening substantially as wide as internal surfaces of the piping.

40. (Original) The method of Claim 38, further comprising closing the valve after removing the adhered deposits.

41. (Original) A self-cleaning chemical vapor deposition (CVD) reactor, comprising a reaction chamber, a remote plasma discharge chamber connected to the reaction chamber by

piping, a gaseous source of fluorine in fluid communication with the piping upstream of the remote plasma discharge chamber, the piping comprises a through-flow type valve positioned between the remote plasma discharge chamber and the reaction chamber, and a power source communicating energy with a frequency between about 300 kHz and 500 kHz to activate fluorine within the remote plasma discharge chamber.

42. (Original) The CVD reactor of Claim 41, wherein wherein a pressure drop is formed across the valve when fully opened and plasma is ignited within the remote plasma discharge chamber, the pressure drop being less than about 5% of a pressure at an inlet to the chamber.

43. (Original) The CVD reactor of Claim 42, wherein the pressure drop is less than about 1% of the pressure at the inlet.

44. (Original) The CVD reactor of Claim 42, wherein an internal surface of the piping comprises a fluorine-passivated metal.

45. (New) The method of Claim 33, wherein dissociating comprises applying energy with a power between about 2,000 W and 3,000 W.